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NEW SPECIES OF POLYCHÆTOUS ANNELIDS FROM CALIFORNIA, MEXICO, PORTO RICO, AND JAMAICA

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Lumbrinereis singularisetis, new species

Figures 1 to 3

The total body length is 105 mm. and its greatest width not quite 3 mm. The prostomium is nearly 2 mm. long and a little more than 1 mm. wide.

The prostomium (Fig. 1) resembles a sugar-loaf in outline and has a slightly narrowed base. A shallow groove runs longitudinally along its dorsal surface. The two nuchal organs show as a dark-colored area on either side. Somite 1 is about one-third as long as the prostomium, somite 2 is a little longer than 1, somite 3 about as long as 1. Later ones increase very slightly in length and more considerably in width until the full size is reached. The parapodia begin on somite 3 as very small elevations which first reach their characteristic form on somite 7. They are never very prominent. The posterior lobe extends beyond the setal portion to a distance about equal to the height of the latter. In the dorsal part of the setal bundle are a few setæ like figure 2, which have long stalks bending sharply toward the end to terminate in an acute point. Each has two finlike expansions lying at about an angle of 45° to one another, which in full face show as two, but from a side view only one can be seen. Toward the ventral part of the parapodium are similar but smaller setæ. Between these two sets are a few shorter ones having a heavy central stalk and marginal wings; their end is bluntly rounded (Fig. 3). These differ from the usual form of this type of setæ in *Lumbrinereis* in that there are no distinct teeth at the end of the shaft. Owing to an accident, the head was badly broken after most of the above description was written, but before the jaws were described. The most that can be said about them is that they were very dark-colored.

Collected at Monterey, California by E. C. Starks. The type and only specimen is No. 2065 in The American Museum of Natural History.

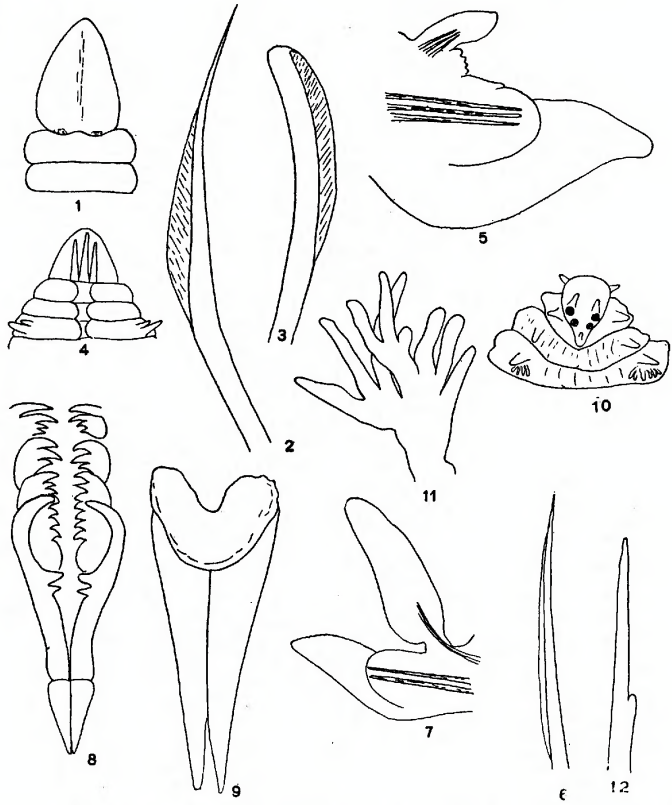
Oenone brevimaxillata, new species

Figures 4 to 9

An imperfect specimen in which the first fifty somites are well preserved, but the remainder of the body much flattened and very soft. The entire surface is very iridescent, apparently due to the softening which has loosened the surface cuticle. The pygidial region evidently has been regenerating, but little can be said about its structure. The whole is over 400 mm. long and has a width of 6 mm.

The prostomium (Fig. 4) has a width a little greater than its mid-dorsal length. The median tentacle reaches to the anterior prostomial border; the lateral ones are a

little shorter than this. On its anterior margin the peristomium is no wider than the prostomium but its posterior margin is wider than it. On its dorsal surface it is noticeably biannulate, but uniannulate ventrally. Over the mid-dorsal surface of the peristomium and the first setigerous somite extends a depression which is wider at its



Figs. 1 to 3. *Lumbrinereis singularisetis*. Fig. 1, head × 7.5; Fig. 2, pointed seta × 165; Fig. 3, blunt-pointed seta × 165.

Figs. 4 to 8. *Oenone brevimaxillata*. Fig. 4, head × 3; Fig. 5, eleventh parapodium × 15; Fig. 6, unilimbate seta × 52; Fig. 7, posterior parapodium × 10; Fig. 8, maxillæ × 7.5.

Figs. 10 to 12. *Hipponoe elongata*. Fig. 10, head × 10; Fig. 11, gill × 22.5; Fig. 12, seta × 185.

anterior margin and abruptly stops at the anterior margin of the second setigerous somite. This at first was regarded as a wrinkling due to the preservation methods but is obviously normal.

Parapodia begin on somite 2 as very small structures but have the characteristic form, i.e., a heavy postsetal lobe, a much smaller and thinner presetal one, and a small dorsal cirrus. The eleventh parapodium (Fig. 5) is very thick and heavy and

has a prominent postsetal lobe which is bent upward. Three very heavy black aciculæ lie in the setal lobe. There is no ventral cirrus. Dorso-laterally and ventro-laterally from the setal lobe arise two tufts of setæ, all unilimbate and sharp-pointed (Fig. 6). Most of them are rather heavy but a few are more slender. The dorsal ones are longer and less numerous than the ventral. In a parapodium from the posterior body region (Fig. 7) the relations of the anterior and posterior lips to the setal portion remain much as before while the dorsal cirrus is much larger, constricted at the base and bent upward. The setæ are more slender and longer than those in anterior somites but otherwise resemble them.

In the maxillæ (Fig. 8) the carrier of the forceps is much shorter than is usual in this genus, the forceps rather straight and bent only near the ends. On the inner margin of each part are two strong teeth, one much larger than the other. The first pair of plates are provided each with seven sharp teeth, the next two with three each, and the final pair have only one. In the second pair of plates the two distal teeth are larger than the proximal, in the third pair the one distal one is larger than either of the two proximal. The mandible (Fig. 9) is the same length as the maxilla and has the usual form. The maxilla is black and there are black pigmented areas laterally on either side not shown in the drawing. The mandible is much lighter in color, the most conspicuous pigmentation being a narrow strip around the margin of the beveled area.

The type and only specimen is from the collection of The American Museum of Natural History and the only locality record is given as "Mexico." It is No. 2082 in the Museum collections.

Nereis largoensis Treadwell

Nereis brevicirrata Treadwell, 1929, American Museum Novitates, No. 392, pp. 3 to 5, Figs. 9 to 14.

This specific name is proposed to replace *brevicirrata* which was preoccupied. The type is No. 1987, in The American Museum of Natural History.

Hipponoe elongata, new species

Figures 10 to 12

A single specimen, 185 mm. long; greatest body width, including parapodia, 8 mm. The prostomium is about 0.5 mm. wide and 0.8 mm. long (Fig. 10). Its anterior end is rounded; its posterior end terminates in an acute point. The eyes on either side lie behind the midline of the prostomium; those of the same side are set close together, the anterior pair being the larger. In front of either anterior eye is a short blunt tentacle, and another is situated on either side just below the anterior prostomial margin, its tip being visible from above. The unpaired posterior tentacle is represented by a very short elevation near the posterior margin of the prostomium. There is no caruncle.

On either side the first somite extends almost to the anterior border of the prostomium and is interrupted in its mid-dorsal line by the posterior end of the latter. Dorsally each half of this first somite is triangular in outline, its lateral margin forming the base of the triangle. Dorsally the second somite is longest on its lateral margins, and narrows in the mid-dorsal line. Both of the first two somites are without gills

but carry prominent dorsal cirri. The third somite is wider than the second and differs from it mainly in the possession of gills on either side posterior to the dorsal cirrus. The dorsal surfaces of all somites are marked with longitudinal lines. Later somites gradually increase in width as far as about the middle of the body. The posterior quarter of the body narrows to the pygidium which is about of the same width as the prostomium. Ventrally the first three somites bound the mouth.

The gills consist of a stout basal portion situated (in preserved material) in a definite depression on whose anterior wall is a cylindrical elevation, truncate at its apex, which carries the dorsal cirrus and the setal tuft, the gills lying, therefore, just posterior to the dorsal cirrus. In the most anterior somites the gills consist of two "hands" of stout branchiæ arising one behind the other on the end of a basal portion. Farther posteriorly the number of these "hands" increases and their arrangement is more complicated. One "hand" is shown in figure 11. Gills occur on all somites from the third to the one just in front of the anal. In general their sizes are correlated with the size of the somite on which they occur, but so far as can be told from preserved material they are never very prominent.

The anal opening is very small, at the extreme posterior end of the body.

The first parapodium has bluntly conical dorsal and ventral cirri and small tufts of neuro- and notopodial setæ. In a parapodium from the middle of the body the neuro- and notopodia are widely separated and protrude noticeably from the side of the body, while the portion which unites them is hardly more elevated than the general body surface. The prominent dorsal cirrus and the setal tuft protrude from an oval depression at the end of the above-mentioned cylindrical elevation. The neuropodial setæ protrude from a similar oval depression on the apex of the cylindrical neuropodium. The small ventral cirrus lies just ventral to this depression.

The notopodial setæ are all very long, slender, and sharp-pointed. The neuropodial ones are in a dense tuft, all essentially similar in form, but a few are larger than the others. Each (Fig. 12) has near the end a short blunt marginal tooth, beyond which the seta tapers to a blunt point. These ends are darker in color than any other part of the seta.

Hipponoe is an uncommon genus, the only other species thus far recorded from the eastern American coast being *H. gaudichaudi* Audouin et Milne-Edwards (McIntosh, 'Reports on the Scientific Results of the Voyage of H. M. S. "Challenger,"' XII, p. 30, Pl. I, fig. 5; Pl. IV, fig. 3; Pl. IIIA, figs. 13–17) which was taken one hundred miles south of Bermuda on a floating log. From the detailed description given by McIntosh it is evident that *H. elongata* is clearly a different species from *H. gaudichaudi*. This is shown in all details of structure but especially in the absence (in the former) of marginal protrusions on the dorsal setæ and of the hooks in the neuropodium which enable the annelid to attach itself to *Lepas* with which *H. gaudichaudi* lives commensally.

Collected in Porto Rico by R. W. Miner. The type and only specimen is No. 2067, in The American Museum of Natural History.

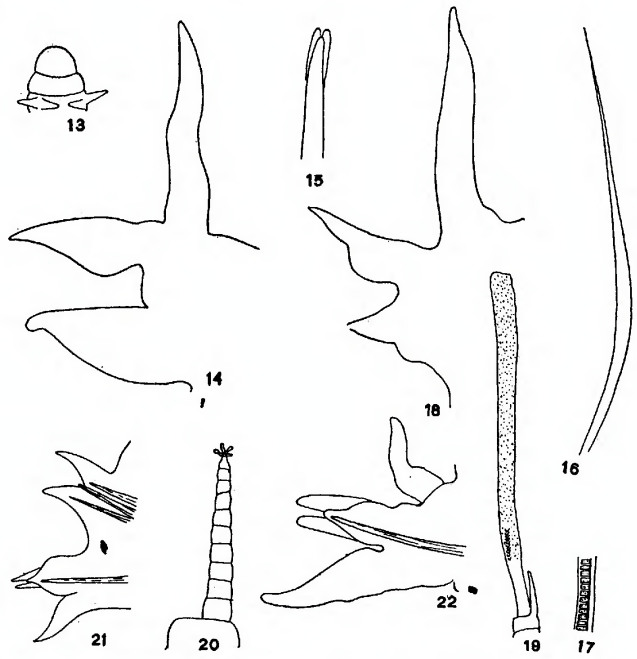
Scoloplos cirrata Treadwell

Aricia cirrata Treadwell, 1901, 'Polychætous Annelids of Porto Rico,' Bull. U. S. F. C. for 1900, II, pp. 201–202, Figs. 54 to 57.

This should have been placed in the genus *Scoloplos* instead of

Aricia. Figure 54 of the original description shows the first somite to be as long as the two following. Comparison of the Jamaican specimen with the type is not feasible, but it seems certain that what was figured there as the first somite was really the first two, the constriction between them not having been clear. Another correction to be made is that the fine setæ retain their marginal teeth in posterior somites.

Collected at Montego Bay, Jamaica, in July, 1921, by A. L. Treadwell.



Figs. 13 to 18. *Nainereis mutilata.* Fig. 13, head × 4; Fig. 14, anterior parapodium × 45; Fig. 15, neuropodial seta × 250; Fig. 16, slender seta × 185; Fig. 17, camerated part of fin of slender seta × 250; Fig. 18, posterior parapodium × 45.

Figs. 19 to 21. *Goniada teres.* Fig. 19, head × 5; Fig. 20, prostomium × 20; Fig. 21, posterior parapodium × 22.5.

Nainereis mutilata, new species

Figures 13 to 18

Four specimens, all more or less mutilated. In the type, an anterior region comprising approximately 80 somites and 25 mm. in length is followed by a softened and disintegrated portion involving several somites, and behind this another region, about equal in length to the anterior one, continues to the pygidium. The peristomial width is barely 1 mm. and the body gradually widens posterior to this up to the twelfth somite which is 4 mm. wide. Behind the twelfth somite there is a gradual

decrease in body width which continues to somite 30, and this width is continued posteriorly until near the very end.

The form of the prostomium depends on the position of the pharynx. In the type specimen, the pharynx is inverted, and the prostomium margin forms almost a half circle (Fig. 13). In others the prostomium is everted, and, under these conditions, the prostomial width is about twice that of its length. The protruded pharynx is in the form of two rather thick, flattened lobes, about as long as the prostomium.

The gills begin on the second setigerous somite, thus for this genus unusually near the anterior end of the body. The anterior gills are conical, sharp-pointed and not much larger than the dorsal cirri. In the anterior broader region of the body they are separated dorsally but in the narrower posterior regions they overlap on the mid-dorsal line. They are sharp-pointed throughout but posteriorly are less distinctly conical in outline. The dorsal surface of the body is flat throughout its entire extent, this being more noticeable in the anterior broader region than in the narrower. The ventral surface is rounded.

Anterior parapodia (Fig. 14) have asymmetrically lanceolate notopodial lobes which in the entire animal are directed almost vertically upward. The dorsal margin of the neuropodial lobe extends horizontally from the side of the somite, and the apex of the lobe is bluntly rounded. From just within the apex the vertical diameter of the lobe rapidly enlarges toward the body wall. The gill is situated on the dorsal surface of the body, at the edge of the neuropodium. Neuropodial setæ are numerous, arranged in general in a vertical row completely covering the anterior face of the setal lobe. A smaller tuft of longer setæ arises just in front of the notopodial lobe. There are two kinds of setæ in the neuropodium: one found only near the ventral end, rather heavy, apex bluntly rounded and covered by a hood (Fig. 15); the other variety is longer than the first and makes up the greater part of the tuft. For the greater part of their length they are straight but toward the apex they bend and then taper to an acute point (Fig. 16). On the convex margin of the bend is a marginal fin (not shown in Fig. 16). Throughout the greater part of its length this fin is camerated (Fig. 17), which structure does not extend on to the axis. The notopodial setæ are arranged in a wide-spreading fan. They are camerated like the above-described ones from the neuropodium.

In posterior parapodia (Fig. 18) the notopodium retains approximately the same character it had in anterior regions, while the neuropodium is relatively much smaller and is conical in outline. There is a rounded presetal lip. In the neuropodium are a few (three in the one drawn) heavy, straight, blunt-pointed acicula-like setæ which extend out between the lobes to near the apex of the conical one and a few (two in the one drawn) slender ones having the camerated structure. A very few of the latter type were all that could be found in the notopodium.

Collected by A. L. Treadwell at Montego Bay, Jamaica, in 1921. The type is No. 2070 in The American Museum of Natural History.

Goniada teres, new species

Figures 19 to 22

A single specimen incomplete posteriorly. About one hundred and fifty of the anterior somites have a length of 65 mm. The greatest body width is 1 mm. while the width of the body in the posterior region is scarcely more than one-third of that.

The protruded proboscis is 9 mm. long (Fig. 19). There are four short tentacles, each apparently two-jointed. For a distance along its basal portion about equal to the length of the prostomium the proboscis surface is smooth, while beyond this it is covered with minute papillæ. On either side, just beyond the smooth basal portion, is a row of ten V-shaped plates. These are not noticeably different from one another in size, but from the base toward the apex of the row they become progressively heavier and darker in color. I was unable to find any terminal teeth in the proboscis.

The prostomium (Fig. 20) is only very slightly tapered toward the end and has ten indistinct joints. The peristomium is nearly twice as long as somite 2, and somite 2 is about equal in length to somite 3. From here posteriorly there is a gradual decrease in length. The first parapodium, on somite 2, is small; later ones showing a gradual increase up to the region of the fifteenth to the twentieth where they reach full size. On somite 57 the change from the one-lobed to the two-lobed condition characterizing the posterior portion of the body takes place. The anterior region of the body is pale brown, and in the region of somites 40 to 50 a faint dark brown patch appears on the body wall dorsal to each parapodium. At the point where the notopodium first appears this patch abruptly becomes circular in outline and much darker in color. A narrow band of a slightly paler color runs across the dorsal margin of the somite from one of these pigment areas to the other. At this same place, the dorsal cirrus, the end of the setal lobe of the notopodium, and the ventral cirrus become deeply pigmented, while the whole of the neuropodium becomes darker in color. Ventrally there is a similar spot near each parapodial margin and a median ventral row of very small dots.

A parapodium from the posterior end of the fragment (Fig. 21) has a notopodial lobe in the form of a sharp cone, quite similar in outline to the dorsal cirrus but heavier than it. In the neuropodium are two slender postsetal lobes, longer than the presetal, which is hemispherical in outline, but at the outer margin prolonged into a slender tip. Between the anterior and posterior lips is a vertical row of slender compound setæ. A single acicula lies in the neuropodium and several in the notopodium. The ventral cirrus is large and conical fully as long as any setal lip. It is densely pigmented, the pigmentation extending medially over the body surface. The neuropodial setæ are very slender and have a glassy texture, the terminal joint flattened, narrowing gradually to an acute point and minutely toothed along one margin. This terminal portion is longer than that part of the basal which protrudes from the body surface. There are no setæ in the notopodium, but there are several aciculæ whose apices protrude slightly from the surface.

In anterior somites only the neuropodium is present. This (Fig. 22) has two long cylindrical posterior lips and an anterior one which is about two-thirds as long as these but broader at the base and more definitely narrowed toward the end. The dorsal cirrus is small, the ventral one large. There is a single tuft of compound setæ.

Collected at Montego Bay, Jamaica, July, 1921, by A. L. Treadwell. The type is No. 2068 in The American Museum of Natural History.